

Undiagnosed HIV Infection in a New York City Emergency Room



Results of a Blinded Serosurvey, December 2009-January 2010

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Background

- CDC estimates that in 2006 21% of persons infected with HIV had never been tested or diagnosed and were not aware of their infection (*MMWR* 2008)
- As of December 31, 2010, 1.4% of the NYC population (110,736 persons) had been diagnosed, reported and is living with HIV/AIDS.
- How many in NYC are undiagnosed?
 - Citywide 2003: 26%
 - Rikers Island 2006: 27%
 - NHANES 2005: 5%

Setting

- A high volume emergency room in the Bronx (N~56,000 per year, 8,347 Dec→Jan)
- Has proactive voluntary rapid testing program
- All patients who are cognitively and clinically eligible are offered HIV rapid testing by a cadre of counselors that works all shifts seven days per week
- 21% of patients accepted RT
 - 5 newly diagnosed during serosurvey
 - 197/8,347 (2.4%) matched to registry as previously diagnosed

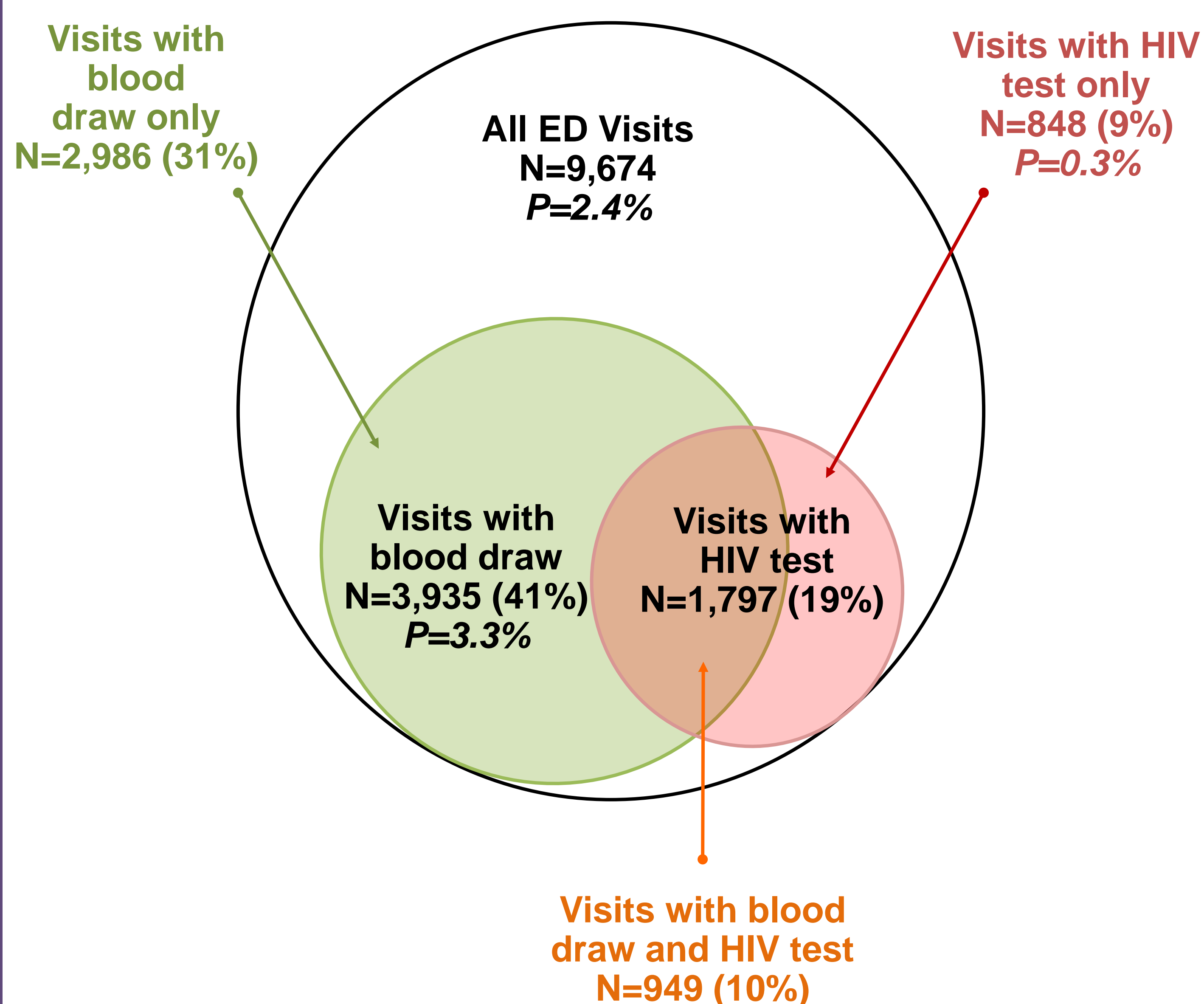
Research Questions

- RT program reached 21% of persons presenting to ER
- What about the other 80%?
- What is the true prevalence of HIV in this ER?

Objectives and Methods

- Conduct blinded HIV serosurvey using leftover specimens of persons having blood drawn for hematology (CBC) or chemistry in ER (43% of patients)
- Match RT accepters and specimens to HIV surveillance registry, record diagnosis of matches
- Remove all identifiers from specimens
- Test blinded specimens for HIV and calculate P, N and % previously undiagnosed

Who accepted RT, who had blood drawn?



Results

- 2.4%** of patients presenting to ER matched to surveillance registry before blinding and testing
- After blinded testing, **3.3%** (111/3373) were found to be positive
- Among the 111 positives, 14 (**13.5%**) were not previously diagnosed, not in surveillance, and not diagnosed by RT during the serosurvey
- Most undiagnosed were black and Hispanic, but largest percentages undiagnosed were among persons aged 65+ and whites

Table 1: HIV Serostatus and Diagnosis Status in the ER by Demographics

	Total N	Serostatus						Diagnosis Status of Seropositives					
		No blood / QNS		Positive				Undiagnosed			Diagnosed		
	N	N	%	%	N	%	%	N	%	%	N	%	%
Total	8347	4971	100.0	59.6	111	100	1.3	15	100	13.5	96	100	86.5
Sex													
Female	4528	2668	53.7	58.9	48	43	1.1	8	53.3	16.7	40	41.7	83.3
Male	3819	2303	46.3	60.3	63	57	1.6	7	46.7	11.1	56	58.3	88.9
Race/Ethnicity													
Missing	19	19	0.4	100.0	0	0	0.0	0	0	0	0	0	0
Black	2539	1548	31.1	61.0	46	41	1.8	5	33.3	10.9	41	42.7	89.1
Hispanic	3811	2275	45.8	59.7	44	40	1.2	5	33.3	11.4	39	40.6	88.6
Other	1110	603	12.1	54.3	16	14	1.4	2	13.3	12.5	14	14.6	87.5
White	868	526	10.6	60.6	5	4.5	0.6	3	20	60	2	2.1	40
Age group (years)													
<25	1577	1094	22.0	69.4	6	5.4	0.4	0	0	0	6	6.3	100
25-34	1908	1280	25.7	67.1	11	9.9	0.6	0	0	0	11	11.5	100
35-44	1484	937	18.8	63.1	34	31	2.3	7	46.7	20.6	27	28.1	79.4
45-54	1481	873	17.6	58.9	34	31	2.3	5	33.3	14.7	29	30.2	85.3
55-64	915	456	9.2	49.8	22	20	2.4	2	13.3	9.1	20	20.8	90.9
>=65	982	331	6.7	33.7	4	3.6	0.4	1	6.7	25	3	3.1	75

Conclusions

- HIV prevalence in this ER was 11 times higher in persons undergoing blood draw than persons accepting RT
- People with blood drawn had a high rate of undiagnosed HIV infections
- The majority of undiagnosed infections were among young black and Hispanic persons
- However, the largest proportions of undiagnosed did not fit any age, race, or risk (as measured by chief complaint) stereotype

Limitations

- RT was able to reach 19% of persons presenting to ER
- Testing all those with blood drawn added another 31%
- Overlap of RT and blood draw was 10%
- Thus, even adding routine testing to all blood draws would have covered only 40% of the ER
- Need to consider other opportunities, e.g., saving admissions bloods and getting consent from patients after they have stabilized – this would add another 15% to the coverage

Recommendations

- Test everyone who comes in the door
 - During ER visit
 - Later, after admitted and stabilized (use admission blood)
- Don't rely on stereotypes (young, minority) for patient selection – largest percentages of undiagnosed persons did not fit "standard" risk profile
- Take every opportunity to offer testing
 - RT for those who accept
 - Consent for testing for all patients getting blood drawn
 - Later testing for admissions